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PROVISIONAL APPLICATION FOR PATENT COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53 (c).

INVENTOR(S)			
Given Name (first and middle (if any))	Family Name or Surname	Residence (City and either State or Foreign Country)	
ENRIQUE DAVID	SANCHO	ZICHARON YACOV, ISRAEL	
<input type="checkbox"/> Additional inventors are being named on the ____ separately numbered sheets attached hereto			
TITLE OF THE INVENTION (250 characters max)			
A METHOD FOR SECURE NETWORK PURCHASING			
Direct all correspondence to:		CORRESPONDENCE ADDRESS	
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ENCLOSED APPLICATION PARTS (check all that apply)			
<input checked="" type="checkbox"/> Specification Number of Pages	20	<input type="checkbox"/> Small Entity Statement	
<input checked="" type="checkbox"/> Drawing(s) Number of Sheets	6	<input type="checkbox"/> Other (specify)	
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<input type="checkbox"/> No. <input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are:			

Respectfully submitted

SIGNATURE

Date 24/11/99

TYPED or PRINTED NAME

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REGISTRATION NO.

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(if appropriate)

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EGT 3-01

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USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. This will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C., 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C., 20231.

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Yvonne James Harris
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Provisional Patent Application
Docket No. EGI 3-02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Enrique David Sancho

Examiner

Serial No. To Be Assigned

Art Unit

Filed: Herewith

Date: 24 November, 1999

Entitled: A METHOD FOR SECURE
NETWORK PURCHASING

Assistant Commissioner of Patents
BOX PROVISIONAL APPLICATION
Washington, D.C. 20231

TRANSMITTAL LETTER AND EXPRESS MAIL CERTIFICATION

Dear Sir:

Enclosed herewith please find the following:

1. Provisional Patent Application
2. 6 Sheets Of Drawings
3. Certification Of Express Mailing
4. Return Receipt Letter and Envelope
5. Authorization to charge filing fee of \$150 against Deposit Account No. 50-1115. Any insufficiency is similarly authorized for charge against said account.

Respectfully submitted,



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60162352-112490
66421-252700

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

PROVISIONAL PATENT APPLICATION

TO ALL WHOM IT MAY CONCERN:

ENRIQUE DAVID SANCHO, of P.O. Box 1151, Zichron Yaacov,
30900, Israel, has invented:

A Method For Secure Network Purchasing

for which the following is a provisional application.

A METHOD FOR SECURE NETWORK PURCHASING

TECHNOLOGICAL FIELD OF THE INVENTION

- 5 The present invention relates to methods for implementing secure purchases over a computer network. More particularly, the methods relate to a system which permits purchases of merchandise to be made over a computer network, whereby the purchaser may feel confident that personal credit card information is not at risk of being diverted, misappropriated or stolen and the
- 10 merchant may be more confident that the purchaser is bona fide.

It is well known for buyers of merchandise to access the global client/server network commonly referred to as the Internet, a part of which is the World Wide Web, for the purpose of searching for and purchasing merchandise from

- 15 on-line vendors selling wares ranging from travel services and investment services to buying CD recordings, books, software, computer hardware and the like. Most purchases are conducted in the following manner: a purchaser using a browser application on his local client computer connects via his computer's modem to a dial-up Internet Service Provider (hereinafter "ISP")
- 20 and makes connections therethrough to various Web sites, Internet server locations assigned a URL (Uniform Resource Locator) address. The purchaser selects his merchandise and the vendor usually requests payment by one of several methods, one of which usually includes payment by providing credit card information.

According to surveys and other marketing data, there always has been and there still exists a high percentage of the population which is deterred from purchasing merchandise directly over the Internet. This large population
5 apparently fears that, despite all the efforts at security and cryptography promised by the vendors, there still exists the probability that their credit account information will be intercepted on-line by a third party computer hacker and used illegally, at great expense and trouble for the cardholder.

10 An additional anxiety-inducing factor related to merchandising over the Internet, or e-commerce, is that the merchant cannot always be certain that just because he has obtained credit card information, that he will actually be paid for the merchandise he ships. After all, credit card fraud and/or theft occurs regularly and may not be caught in time to stop the order from being
15 shipped. When the cardholder discovers the theft and stops the card, it may be too late for the vendor to recover his property. At the very least, this situation leads to unnecessary aggravation and wasted resources for the merchant, credit card company and cardholder.

20 SUMMARY AND OBJECTS OF THE INVENTION

It is thus an objective of the present invention to provide a method for potential on-line buyers of merchandise marketed over the Internet to pay for

those purchases with minimized exposure to the risk of credit card theft by electronic interception.

It is a further objective of the invention to provide a mechanism for facilitating e-commerce which will increase the confidence of the consuming public in the safety of such transactions.

It is still a further objective of the invention to provide a mechanism for facilitating e-commerce which will increase the confidence with which vendors may ship the purchased product or deliver the purchased service without fear of the payment being provided fraudulently.

These objectives and others and others not specifically enumerated herein are achieved by the invention disclosed herein which comprises a method for providing payment to an on-line merchant for services or goods provided to an on-line buyer. The method takes advantage of the existing business relationships between the member computers which form the structure of the Internet.

Generally speaking, the Internet is a network of computers, remote from one another, linked by a variety of communications lines including telephone lines, cable television lines, satellite link-ups and the like. Internet service providers (hereinafter "ISPs") provide the link to the main backbone of the Internet for small end users. The account for the end user is established in the normal

manner usually by providing credit card information to the ISP by conventional means, such as by voice telephony, fax transmission or check. In most ISP-end user relationships, the ISP has been given credit card or other credit account information, which information is on file with the ISP and available to the ISP's computers. In return for receiving payment, the ISP provides a gateway to the Internet for the end-user's use. The end-user (or subscriber) is provided with identification codes for dialling directly into the ISP's computers and software means (for example, dialler software, browser software, electronic mail software, and the like) for doing so if necessary.

Each time a subscriber signs in to the ISP's computers for an on-line session, the subscriber is assigned an Internet Protocol (hereinafter "IP") address. The subscriber's computer transmits messages which are received by the ISP computer and relayed through the IP address and out onto the Internet to the ultimate intended recipient computer. During the entire time the on-line session is in progress, the IP address does not change and is thus available as identifying information. By monitoring and occasionally re-verifying that the subscriber's computer is still on-line at the assigned IP address, the ISP can confirm that certain activities could be attributed to the subscriber.

The present invention takes advantage of the intimate relationship which is re-created every time an Internet subscriber's computer goes online and signs into his ISP's computer by assigning to the ISP computer the function of clearinghouse and active intermediary between the subscriber's computer and

the vendor's computer. A subscriber computer signs in to the ISP computer system and is recognized and assigned an IP address. When the subscriber identifies merchandise or services at a vendor's website which he wishes to purchase, he sends programming to the website which selects the items and

5 instructs the vendor's computer to generate a purchase authorization request which is sent to the ISP computer. The purchase authorization request contains information about the merchandise to be purchased, identifying information about the proposed purchaser, some of which is the identifying information assigned by the ISP to the subscriber. The ISP confirms internally

10 that the subscriber is still signed in to the ISP computer system by verifying the identity of the computer currently actively communicating through the IP address. When satisfied that the subscriber is still online, the ISP computer generates and sends a message to the subscriber's computer requesting confirmation of the order for the merchandise. Upon receipt from the

15 subscriber's computer of the confirmation, the ISP generates and transmits to the vendor's computer a message confirming the order and providing a confirmation number, agreeing to pay the invoice which the vendor's computer subsequently generates and presents to the ISP computer. ISP computer then uses the subscriber's credit card information and presents an

20 invoice against the credit card account to be sent through normal channels.

Brief Description Of The Drawings

For better understanding of the invention, the following drawings are included for consideration in combination with the detailed specification which follows:

5

Fig. 1 shows a buyer computer in communication with a vendor computer via the ISP computer, wherein buyer computer is initiating a purchase transaction;

10 Fig. 2 shows the vendor computer communicating with the ISP computer to request authorization to complete buyer's requested transaction;

Fig. 3 shows the ISP computer confirming that correct IP address is active with buyer's computer and requesting confirmation of buyer's transaction;

15

Fig. 4 shows buyers computer responding to ISP computer's request for confirmation; and

Fig. 5 shows ISP computer's transmission of a confirmation code and
20 invoicing instructions to vendor's computer.

Fig. 6 is a flow diagram which shows the steps of another exemplary embodiment of the present invention.

Detailed Description Of The Exemplary Embodiments

As was mentioned hereinabove, the account for the subscriber (also referred to as an end user or Buyer) is established in the normal manner usually by

5 providing credit card information to the ISP by conventional means, such as by voice telephony, fax transmission or check. In most ISP-end user relationships, the ISP has been given credit card information and this information is on file with the ISP and available to the ISP's computers. In return for receiving payment, the ISP provides a gateway to the Internet for the

10 end-user's use. The end-user (or subscriber) is provided with software means and identification codes for dialling directly into the ISP's computers. The ISP's computers assign an Internet Protocol (hereinafter "IP") address to the subscriber for use during the particular on-line session in progress. The subscriber's computer transmits messages which are received by the ISP

15 computer and relayed through the IP address and out onto the Internet to the ultimate intended recipient computer. During the entire time the on-line session in progress, the IP address does not change and is thus available as identifying information. By monitoring and occasionally re-verifying that the subscriber's computer is still on-line at the assigned IP address, the ISP can

20 confirm that certain activities could be attributed to the subscriber.

The present invention takes advantage of the intimate relationship which is re-created every time an Internet subscriber's computer goes online and signs into his ISP's computer by assigning to the ISP computer the function of

clearinghouse and active intermediary between the subscriber's computer and the vendor's computer.

The method is described with reference to the drawings described
5 hereinabove as follows:

The ISP (also referred to hereinafter as a "Clearinghouse Computer") is assigned a unique ISP-ID code.

- 10 As described hereinabove, the ISP's subscriber or customer (hereinafter "Buyer") has gained the ability to access the Internet network from his remote computer by opening an account with ISP.

- The Buyer has provided credit card or other payment information to the ISP
15 when the account was opened, by conventional mail, fax, voice telephony or any other acceptable method including known methods. In exchange, Buyer receives from the ISP certain software and identification codes which permit Buyer's computer to communicate with the ISP's computers and to negotiate (request and obtain) an IP address.

- 20 At time of first sign-on, Buyer's Computer (hereinafter referred to as "BC") transmits to BC a Buyer-ID code which is electronically recorded or written into a file (e.g. a cookie file) on BC. The Buyer ID code could be generated by any number of methods known in the art for generating identification codes.

When Buyer activates his BC to log onto ISP network (BC provides standard log-in information to ISP), ISP also reads and logs in Buyer-ID code and assigns IP address for current session to BC.

5

BC connects via ISP portal with Merchant Computer (MC) and Buyer selects desired merchandise and further selects to pay using SafeWWW payment method disclosed hereinbelow.

- 10 Buyer-ID and BC's IP address assigned for current session are provided to MC programmed to request and receive said information

MC is programmed to use Buyer-ID and BC's current IP address along with information such as desired item ID, cost and name for generating an

- 15 electronic purchase inquiry which is transmitted through the network to ISP.

ISP is programmed such that upon receipt of purchase inquiry from MC, ISP uses combination of IP address and Buyer-ID to determine within ISP's internal network whether Buyer is in fact still online at the address assigned at
20 the beginning of the online session.

if ISP computer is unable to confirm that BC is still connected to ISP system at the IP address expected, or that the BC IP address given by MC is different from that assigned by ISP to BC, then a negative message is generated by

ISP's computer and transmitted to MC thereby resulting in the early termination of the purchase transaction process by MC. ISP's computer may alternatively be programmed to conduct other tests or inspect for other necessary conditions in an attempt to verify the source of the order placed
5 with MC.

If BC is determined to be connected to ISP at correct address, ISP sends message containing details of purchase inquiry to BC asking Buyer to input confirmation of details of purchase desired to be transacted with MC.

10 Upon input of confirmation command by Buyer into BC, BC generates and transmits a confirmation to ISP.

On receipt of Buyer's confirmation, ISP then generates and transmits a
15 Transaction Confirmation Number and instructs MC to proceed with filling Buyer's order and also to generate and forward an invoice to ISP.

The invoice to the ISP can be generated electronically and transmitted directly to ISP's computer, instantaneously (during the same session) or MC might
20 wait until receiving programming indicating that the order has actually been filled.

Receipt of the invoice by ISP's computer then causes the ISP computer to generate and transmit, either electronically or through conventional means, an

instruction to Buyer's credit card company to debit Buyer's account for the amount of the purchase. Alternatively, it is contemplated herein that ISP could bill Buyer directly or any other reimbursement arrangement, e.g. through an insurance fund.

5

In other exemplary embodiments of the present invention, either the ISP's server acts as the security coordinator or security copordination is accomplished by a black box (hereinafter "ISP Toolbox") located at the site of the ISP server. The following description will describe the embodiment where
10 the security coordinator functions are carried out by an ISP Toolbox.

Physical Placement of ISP Toolbox -

Located at the physical site of the ISP, the ISP Toolbox is connected to the
15 phone or communication lines coming into the ISP server directly from users on one side of ISP server. The ISP Toolbox is also connected to lines going out to the Internet (via the modem basket) from the ISP server. The ISP Toolbox does not interact directly with the ISP server. For the most part, it monitors incoming and outgoing traffic, waiting to take over those
20 communications should a security related transaction be called for by a home user.

The ISP Toolbox is essentially a mini-server, dedicated to the security tasks assigned to it. The ISP Toolbox is provided with programming which, when activated, will send, receive and/or verify the proper forms and/or data to

either a participating home user, ISP server or vendor in order to carry out the proposed transaction.

The following scenario describes what can happen when a request for such a security related transaction is detected by the ISP Toolbox.

- 5 1. Application Process - This process only needs to occur once for each account which a user might have:
 - a) In order to begin participation in the secure transaction system installed by his or her ISP, a User at home connects his home PC with the server of the ISP with whom the home user has established an ISP-user
10 relationship. Upon establishing direct dial-up communications with the ISP server, the home user activates a file on ISP Website, for example by clicking a button presented on his browser using his input device, which alerts the ISP Toolbox to user's request for an application to enroll user's PC in system of the invention.
 - 15 b) The ISP Toolbox supplies an apply.asp ("asp" denotes an active server page) file to the browser application, such as Netscape Company's Navigator® or Communicator® browser applications or Microsoft Corp.'s Internet Explorer® browser applications. The user fills in the requested information into the form and clicks on a submit button on his display.
20 The apply.asp submits a new application record bearing the user's ISP user name back to the ISP Toolbox which in turn notifies the ISP, for example by way of an e-mail bearing a URL link to the application form,

that a request for credit has been made. A credit decision on the application is then made either electronically at the level of the ISP based on predefined or by a human credit manager. The ISP verifies the username and e-mail address of the user and sets a credit limit. The account is marked as "activated" by the setting of an approved credit limit which initiates promotion by the ISP toolbox of the user record from application status to active account status.

2) Activation of the account initiates a process by which the ISP toolbox generates a UID or unique identification for the user. The ISP toolbox then generates and transmits an e-mail to the user which contains a link to a registration URL. When the user opens the e-mail and clicks on the registration URL, it downloads and activates an installation page and a system file from the ISP Toolbox, containing a Locator which comprises an <OBJECT> tag, the tag pointing to a GUID (Unique ID generator) and a codebase. The Locator is installed in the user's browser cache and an instance thereof is blown inside the HTML page object module.

3) The ISP Toolbox asks user to inspect his/her personal data, to choose a personal password and click an icon or button to finish activation of the new account. Clicking the button causes the onsubmit handler which came as part of the e-mail with the Locator, to start running a script which takes the user information, UID and further information about the user's computer and sends these back to the ISP Toolbox as well as saving them in cache files on the user's PC. The user's PC is then put into a wait

state whereby it monitors a communication port waiting for a reply and it temporarily blocks the subscriber's browser.

- 4) Once the submission code from step 3 above is received by the ISP Toolbox, there is activated a COM+ object that sends a series of SET-PARAM commands back to the waiting Locator using UDP or User Datagram Protocol. Thus, the ISP Toolbox first receives the submission code and extracts the form data, using it to update the user record previously created, adding to it certain hardware configuration information from subscriber's PC as well as adding the user's password and UID which have been encrypted via RSA or any other suitable encryption means. Then, using UDP, the ISP Toolbox provides the subscriber's PC with a Wallet of data in addition to, or which may include, the following items: a Password to be tendered by subscriber's PC to initiate the next online purchasing session, as well as the subscriber's UID, the ISP's identification, instructions on which IP address to check for the latest version of transaction software, as well as which IP address to use as a secure gateway, and software for future session password generation.
- 5) After transferring the wallet to the client or subscriber PC, the ISP Toolbox redirects the users browser to a congratulations page which includes an <Object> tag pointing to the Locator. The onwindowload handler directs the Locator to add a wallet object to the page.

- 6) The Locator adds the wallet and the wallet is asked by the script to record the user identity which was set in the previous exchange between the ISP Toolbox and the subscriber's PC. This ends the application and registration or setup process.

5

Example of Purchasing Session.

a) Online user goes to Website of merchant using any Web Browser Program and selects merchandise to purchase.

b) User is offered methods of payment and selects option for
SAFEWWW. This activates a script which searches users
machine for installed SafeWWW software.

c) Asks if you want form filled with information from Wallet. Yes -
Information (UID, Name, billing and shipping address, ISP-ID)
extracted from Wallet and filled into form and form sent to
merchant/vendor. At same time, user's onhandler script directs
Wallet to execute Pay command. This returns random number
to script and starts thread that waits for event from network

d) Vendor now receives info and adds info about cost of purchase,
optionally adds merchandise info and sends it to the specific ISP
Toolbox specified by ISP-ID from Wallet.

e) Toolbox activates server Wallet that contacts User home Wallet.
Toolbox validates user hardware ID, UID, and when validated (or

not) It instructs Wallet to open new browser window having URL
to page showing result of handshake.

f) If handshake was positive, then user's wallet displays
confirmation page with transaction info received from vendor
and passed to Toolbox and user is required confirm order by
typing in current password (selected at installation or changed
during maintenance) or to deny the order.

g) Confirmation is received by Toolbox and then Toolbox sends
gatepass response to vendor which advises user that
transaction has been approved.

h) Gatepass is then forwarded to a central clearinghouse server
which receives Gatepass and initiates payment to vendor.
Gatepass can be provided with expiration time. Clearinghouse
server can either be a fourth party server or it could be ISP
server which serves as transaction clearinghouse as described
hereinabove in first exemplary embodiment.

The examples discussed herein and demonstrated by the
Figures are merely for illustrative purposes only. Variations
and modifications of the disclosed invention in a manner well
within the skill of the man of average skill in the art are
contemplated and are intended to be encompassed within

the scope and spirit of the invention as defined by the claims
which follow.

00167352-1-12450

I Claim:

A method of performing secure electronic transactions on a computer network, said network comprising a buying computer, an ISP computer and a vendor computer, including the steps of:

said ISP computer assigning to buying computer a Buyer-ID code and IP address;

said buying computer communicating via said ISP computer with said vendor computer and allowing an operator to select merchandise or services for purchase;

said Buyer-ID and buyer computer's IP address are provided to vendor computer programmed to request and receive said information;

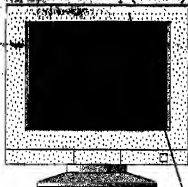
vendor computer is programmed to use Buyer-ID and BC's current IP address along with information such as desired Item ID, cost and name for generating an electronic purchase inquiry which is transmitted to ISP computer;

ISP is programmed such that upon receipt of purchase inquiry from MC, ISP uses combination of IP address and

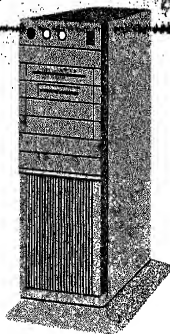
Buyer-ID to determine within ISP's internal network whether
Buyer is in fact still online at the address assigned at the
beginning of the online session;

whereby if buyer computer is determined to be connected to
ISP computer at correct address, ISP computer then
generates and transmits Transaction Confirmation Number
and instructs MC to generate and forward invoice to ISP
computer.

Amazon Shop (Vendor)



Internet Service Provider (ISP)



I am Mr. Smith
ID # 16495358-4379
IP : 154.255.498.643
Purchase a Beatles Book, Item
number 6546/12
Price 30 \$



Pc at Home

F16.1

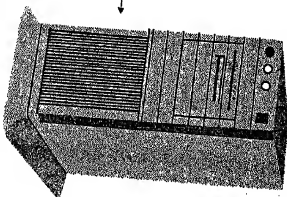
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P-16.2

Internet Service Provider (ISP)



Your customer number 4379
IP: 154.255.498.643
Wants to make a 30 \$ value purchase.
Do you accept this purchase?



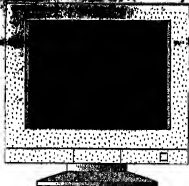
Pe at Home

F-19.2

60167352.112499

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Amazon Shop (Vendor)



Internet Service Provider
(ISP)



Checking IP.....
154.255.498.643
Mr. Smith do you accept a 30 \$
Value purchase that you made in the
Amazon Book shop?
If yes enter your Password.

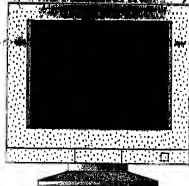


Pc at Home

FIG. 3

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Amazon Shop (Vendor)



Internet Service Provider
(ISP)

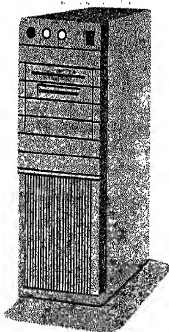


FIG. 4



Pc at Home

I do accept a 30 \$ value purchase that
I made in the Amazon Book Shop.
My password is *****

EE 43873969845

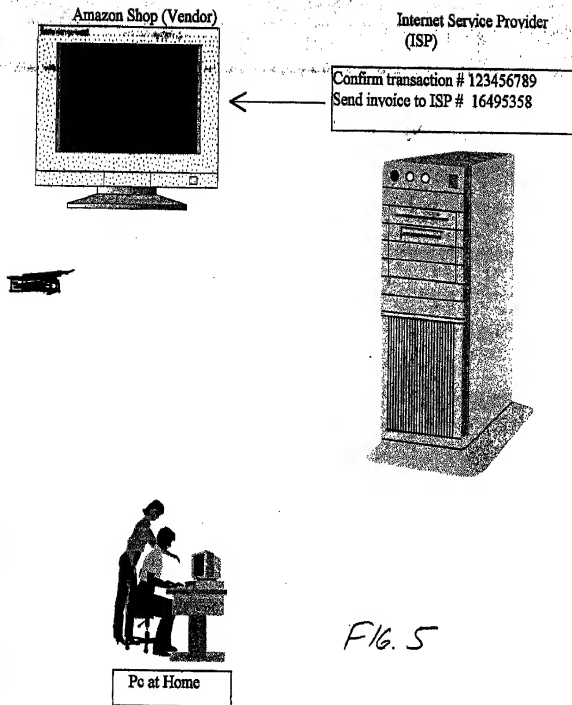
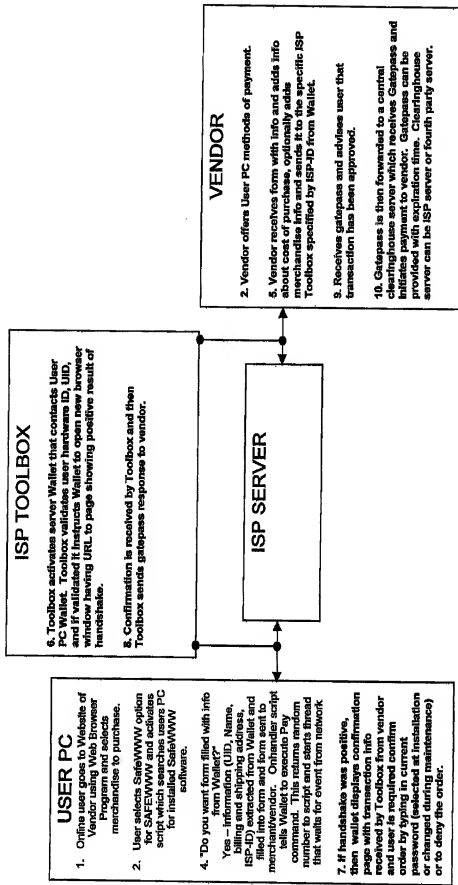


FIG. 5

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FIG. 6



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